



Contents

Volume 15, Number 1 February 2013

<i>Special features</i>		<i>Departments</i>	
Report from the Republic of the Marshall Islands	1	News	8
FEMA's individual and community preparedness awards	7	Websites/Blogs	9
OPINION: Policy and prediction	11	Publications	9
Preparing for repopulation (after Katrina)	12	State offices	1
Training video about emergency response on tribal lands	15	Material added to NTHMP Library	14
Japanese debris update	16	IAQ	17
Oahu emergency evacuation plan	19	Video reservations	20
Many reactor sites face tsunami risk	12	Regional reports	3
Black Emergency Managers Association	16	Conferences	11
Apps	18	Surveys	11

**REPORT FROM THE REPUBLIC OF THE MARSHALL ISLANDS
NATIONAL DISASTER MANAGEMENT OFFICE**

Republic of the Marshall Islands National Disaster Management Office
P.O. Box 15
Majuro, MH 96960
(692) 625-5181
<http://www.rmigovernment.org/index.jsp>

Emergency Preparedness

From: <http://www.aahd.us/initiatives/emergency-preparedness/>

The American Association on Health and Disability has been a leader in the emergency preparedness and disaster response field for people with disabilities. AAHD staff Co-Chair the National Consortium on Emergency Response and Disaster Preparedness with partners from the University of New Mexico and University of Kansas. AAHD is a member of the Interagency Coordinating Council Public Sector Subcommittee of the Department of Homeland Security, the American Nurse's Association Expert Panel on Disaster Preparedness, the Consortium on Citizens with Disabilities on Emergency Management and the Montgomery County Special Needs Task Force. In addition, AAHD staff frequently present at national and state meetings on Disaster Planning for People with Disabilities.

AAHD Staff, Co-chair Consortium on Disabilities Emergency Management Task Force www.c-c-d.org
AAHD Staff invited to present at Institute of Medicine Committee on Prepositioned Medical Countermeasures for the Public www8.nationalacademies.org

AAHD Invited to Join Medical Countermeasure Public Engagement Initiative (HHS) (ASPR) (OPP)
(continued on page 3)

State Offices and agencies of emergency management:

Gives mailing addresses, phone and fax numbers, websites. Does not give personnel names or job titles.
<http://www.fema.gov/about/contact/statedr.shtm>

TsuInfo Alert

is prepared by the Washington State Department of Natural Resources
on behalf of the National Tsunami Hazard Mitigation Program,
a State/Federal Partnership funded through the National Oceanic and Atmospheric Administration (NOAA).

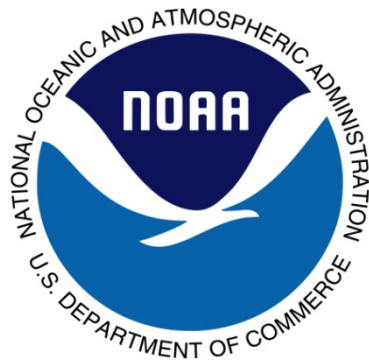
It is assembled by
Lee Walkling, Librarian,
and is published bi-monthly by the
Washington Department of Natural Resources, Division of Geology and Earth Resources.

This publication is free upon request and is available in print (by surface mail), and at
<http://www.dnr.wa.gov/ResearchScience/Topics/GeologyPublicationsLibrary/Pages/tsuinfo.aspx>
Participants in the TsuInfo program can request copies of reports listed in this issue from:

Washington Geology Library
Washington Department of Natural Resources
Division of Geology and Earth Resources
1111 Washington Street SE, MS 47007
Olympia, WA 98504-7007
360/902-1473
fax: 360/902-1785
e-mail: lee.walkling@dnr.wa.gov

The views expressed herein are those of the authors and not necessarily those of
NOAA, the Washington Department of Natural Resources, or other sponsors of
TsuInfo Alert.

ISSN 1938-5064



WASHINGTON STATE DEPARTMENT OF
Natural Resources

(continued from page 1)

We invite you to preview the following documents that AAHD and our partners have developed:

All AAHD resources for Emergency Preparedness
Emergency Preparedness Government Resources by State and Territory
Disaster Resources for People with Disabilities
Disability-related Organizations and Emergency Managers
Office of Disability Integration and Coordination (ODIC)
Ready America
DisasterAssistance.gov
H1N1 and People with Disabilities
American Association on Health and Disability
2008 Annotated Bibliography on Emergency Preparedness and Response for People with Disabilities
Compendium of Initiatives on Emergency Preparedness and People with Disabilities in CDC Funded States 2007.
“Tips for First Responders”
Report and Recommendations of the National Working Group on The Needs and Priorities of People with Disabilities in Emergency Preparedness and Response
National Consortium on Disaster Preparedness and Emergency Response for People with Disabilities
NobodyLeftBehind Research Project ♦

REGIONAL REPORTS

CALIFORNIA

CGS and Cal EMA collaborate on tsunami hazard mitigation and preparedness

Submitted by Rick Wilson, CGS

The California Geological Survey (CGS) and the California Emergency Management Agency (Cal EMA) have been working together on a variety of tsunami hazard mitigation and preparedness activities to further understanding of how tsunamis can affect the coast of California with a goal of improving public safety. These activities are funded by the National Oceanic and Atmospheric Administration through the National Tsunami Hazard Mitigation Program, and by the Federal Emergency Management Agency through a Co-Operative Technical Partnership with FEMA Region IX, and are described as follows:

On June 19, the California Tsunami Steering Committee held a meeting at San Francisco International Airport. Representatives from federal, state, and county governments were on hand to discuss important issues related to tsunamis, including

Tsunami Preparedness Week activities, new map tools for emergency managers, new tsunami maritime and local evacuation brochure products, and planning for potential Japan tsunami debris.

CGS has developed a website devoted to the effects of the 2011 Tohoku-Oki tsunami in the state. The website includes a link to a poster analyzing the impacts to the California maritime communities during the 2010 Chile and 2011 Tohoku tsunamis. Overall, the 2011 tsunami led to one fatality in northern California and caused damage to 27 harbors statewide, totaling nearly \$100M. Effects of the tsunami in California could have been even worse without recent state efforts to understand and convey the best available scientific knowledge, and warning information and ongoing tsunami education. Visit the website at:

http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/Pages/2011_Tohoku.aspx

CGS, Cal EMA, and NOAA-National Weather Service recently completed tsunami sign placement plans for Marin and Sonoma counties. The plans are being used by both counties to initiate their sign planning and placement processes with their coastal communities. Tsunami signage is one of the requirements by NOAA to allow communities to qualify as *TsunamiReady*[™], a program to recognize communities who have met criteria demonstrating enhanced tsunami planning, education, and awareness.

CGS and Humboldt State University (HSU) are close to completing two tsunami related databases: 1) a paleotsunami deposit database that will be used to analyze existing tsunami inundation maps and help in the production of newer probabilistic hazard maps in the future; and 2) a tsunami currents database from video recordings of recent tsunamis that will help evaluate modeling results within harbors and bays. Both CGS and HSU are working with the U.S. Geological Survey exploring several sites statewide for evidence of tsunami deposits. Cal EMA and CGS participated in a county-wide tsunami scenario-driven exercise in Marin on May 10th. The scenario used was a magnitude 9.0 earthquake in Alaska’s Aleutian Islands potentially inundating parts of the Marin coast within 5 hours. Emergency operations functions and communications during an emergency were tested and the cities of Belvedere and Tiburon conducted evacuation drills with a number of their citizens.

From: WSSPC E-Newsletter, Summer 2012, p. 6

MARYLAND

Maryland's statewide public safety radio network takes shape

By Sarah Rich

September 12, 2012

Emergency Management

Maryland has launched the first phase of a statewide public safety radio network that will allow public safety personnel from state agencies and local jurisdictions to communicate digitally across a single, interoperable system.

For the complete report:

<http://www.emergencymgmt.com/safety/Marylands-Statewide-Public-Safety-Radio.html>

PUERTO RICO

Proactive approach to preparedness: Getting ready younger

FEMA Release date: November 26, 2012

FEMA Release number: 19

SAN JUAN, PR –If new generations are raised with emergency preparedness awareness as an inherent part of their early education, communities will become smarter and more resilient sooner. The Federal Emergency Management Agency (FEMA) supports this approach since dependable preparedness plans equal a swifter recovery for individuals, local, state and federal governments after a disaster.

“Our communities need to get better prepared to rapidly respond to emergencies and if we reach this younger audience earlier, emergency preparedness will be a familiar subject, but most importantly, they will be ready sooner. Youngsters have a significant influence on their peers and families, which may drive this preparedness message further on,” said FEMA’s Caribbean Area Division Director, Alejandro De La Campa.

For this reason, FEMA established the first Youth Preparedness Council to discuss and promote steps meant to strengthen the nation’s resiliency against all types of disasters. This Council is comprised of 13 youth leaders (ages 13 – 17) from each of FEMA’s 10 regions, which will develop and conclude their emergency preparedness projects in two years.

13-year old Humacao resident, Gabriela Rodriguez-Boria, is FEMA’s Region II Youth Council representative. Puerto Rico is one of the jurisdictions under Region II, which also includes New York, New Jersey and the US Virgin Islands. With her project, Gabriela

seeks opportunities to prepare youngsters to be ready before and after a disaster strikes, making communities in Puerto Rico more emergency resilient through its budding members. She is organizing a Teen Community Emergency Response Team (CERT) of approximately 15-20 students at her school and plans to replicate this program in other schools in neighboring communities, and eventually to all Region II jurisdictions.

The CERT Program educates people about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Youngsters can involve their schools, neighbors, churches, families and friends in similar initiatives where they can acquire surviving tools for future emergencies. Young minds bring fresh eyes and new perspectives to any preparedness endeavour, therefore FEMA encourages their contribution in emergency planning and readiness for our communities.

There is additional information about the Youth Council at www.citizencorps.gov/getstarted/youth/youthindex. If you are interested in becoming a CERT member, locate the nearest CERT team or check for upcoming training opportunities, visit www.citizencorps.gov/cert. Learn more about emergency preparedness and how to improve your community resiliency to emergency situations; www.fema.gov or www.ready.gov.

Last Updated: December 7, 2012 - 11:12
from: <http://www.fema.gov/news-release/2012/11/26/proactive-approach-preparedness-getting-ready-younger>

WASHINGTON

Long Beach (Washington) moves ahead with berm project

By Amanda Frink, Chinook Observer,

www.chinookobserver.com

Reprinted with permission

Posted: Tuesday, October 23, 2012 6:00 pm

Last Thursday [Oct. 18, 2012], the Peninsula prepared for “the big one” by performing a test of the tsunami warning system and participating in the Great Washington Shakeout.

As another facet of the disaster preparation process, the staff at the city of Long Beach agreed to take the next step in a pilot project to conduct research and plan for construction of earthen berms to serve as vertical tsunami evacuation structures.

Tall, man-made structures that look like grassy hills, berms can be found in Japan as an option for people to seek higher ground in the event of tsunami.

At Monday's Long Beach City Council meeting, the council passed a resolution authorizing City Administrator Gene Miles as the agent to execute a grant application for the amount of \$1 million from FEMA's Hazard Mitigation Grant Program for the research, design and ultimately the construction of earthen berms. Community Development Director Gayle Borchard was designated as the agent alternate.

Project Safe Haven, described as a "grassroots process to develop ideas and strategies about vertical evacuation," brought together University of Washington's College of Built Environments, emergency management officials and earthquake and tsunami experts to assess the evacuation needs for Long Beach, Ilwaco, Ocean Park, Tokeland and North Cove. After conducting site visits and soliciting public comment, it was determined that Long Beach is in great need of vertical evacuation structures as there is no higher ground located within the city limits.

According to the project's report, a tsunami generated by a distant earthquake would allow for a couple hours' notice for residents to evacuate — or it may not affect our area at all. In contrast, a local earthquake would provide little time for people to react and likely cause a tsunami.

The last 9.0 Cascadia subduction zone earthquake that shook our area was in January 1700 in a cycle that recurs on average every 300 to 500 years. Some experts predict that it will happen sometime in the next 50 years in the southern portion of the subduction zone in the vicinity of the Oregon-California state line. The northern section near us may have a longer timeline.

Information gathered through Project Safe Haven states that a local subduction zone earthquake will originate approximately 80 miles off our coast and last five to six minutes. It could cause the ground to liquify or drop in elevation by as much as six feet, rendering motor vehicles useless. Tsunami waves would be arriving within about 40 minutes after the shaking stops, with the first wave estimated to be around 22 feet high.

Building a chance to survive

Numbers like that can paint a picture of little hope for many — and that's why Borchard says Project Safe Haven is so important to the community.

"As a government, we're obligated to look at the safety of our citizens," she explains. "You're

dealing with something you hope will never happen, but you know it will happen to someone someday."

"A 9.0 event will knock you to the ground," Borchard explains. "The shaking will feel like minutes. Foundations will fail, buildings will fail ... Long Beach will be dead because there is no high ground. I am confident that if nothing is done, everyone in Long Beach will be dead."

Evacuation structures would need to be easily accessible on foot within 15 minutes' time and be able to hold evacuees for 12 to 24 hours (until there is no longer a threat of incoming waves). There were three structure options that were considered: buildings, towers and berms. Project Safe Haven documents explains:

"Berms are artificial high ground created from soil. They typically have ramps at a 1:4 slope providing access from the ground to the elevated surface. Berms have a large footprint on the landscape, giving the appearance of an engineered and designed hill. A berm can range in size from 1,000 square feet for 100 people up to 100,000 square feet for 10,000 people.

"A tsunami evacuation tower can take the form of a simple elevated platform above the projected tsunami wave height, or a form such as a lighthouse, that has a ramp or stairs leading to an elevation above projected wave height. A 500 square foot tower can accommodate 50 people and a 1,000 square foot tower can accommodate 100 people."

"A building used as a tsunami evacuation structure has several lower levels that allow the tsunami wave to flow through it or the building is faced in a manner that the structural integrity of the building will support the force of the wave. Tsunami refugees seek safety in the upper floors of the building. Typical tsunami evacuation buildings are hotels or parking structures."

Borchard says the plan is to construct five berms, which is the option that would hold the most people at the lowest cost. "It's cheap compared to a parking structure for a couple million," she notes.

Potential sites for the berms — all on the east side of town — have been chosen. Since there has not been another project like this in the U.S., berm heights are still to be determined through more intensive research funded by the grant. A reference design is horseshoe shaped with a reinforced wall on the ocean side for protection from water and debris, and a slope on the opposite side — similar to the shape of a rubber doorstop. Some ideas for making the berms multipurpose is using the surface as a play area, seating area for recreation events, a kite-flying mound, a viewing area or a place for outdoor music events.

For more information on Project Safe Haven can be found at: <https://catalyst.uw.edu/workspace/wiserjc/19587/116498>.♦

Rush to resilience: Policies reflect worldwide shift in disaster mindset

BY Stacia Sydoriak,

Disaster Research, 597, October 18, 2012

From boardrooms to classrooms to conference rooms, resilience has been a buzz word in the disaster community for some time now. How do we incorporate resilience into disaster planning? How can resilience be measured and communicated? And the always popular mind-pretzel: When we say “resilience” what exactly do we mean?

Now, a new National Academies publication could help move the conversation from talking resilience talk to walking the resilience walk.

Disaster Resilience: A National Imperative, lays out six key recommendations for integrating resilience into public and private disaster planning.

Of course, before they could do that, they had tackle defining resilience. The report ultimately labeled resilience as “the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events.”

The report, which aims to create “a more disaster-resilient America by 2030,” proposes ideas such as a national document database for disaster-related data sharing, cooperative risk management strategies, government-supported local and regional resilience coalitions, and the adoption of federal resilience policies and programs.

“This vision of the future requires a new national culture of disaster resilience in which everyone takes responsibility for resilience to both natural and human-induced disasters. All communities and levels of government know their roles and responsibilities in building resilience, and they act on them” states the report summary.

Notably, the report committee recommends that the Department of Homeland Security, as well as other federal, state, and local agencies, develop a National Resilience Scorecard that would measure resilience. While domestic and international organizations have created resilience measures, the United States has no consistent national standard for resilience measurement, making it difficult to collect uniform data. Given the complexity of the concept, the authors encourage a national measurement strategy that incorporates diverse components of resilience but is adaptable across communities.

The United States isn’t the only one noodling resilience lately though. It’s also been on the agenda of the European Union, Japan, and even a coalition

of small Pacific islands. Earlier this month, the European Union released a policy it hopes will increase resilience by encouraging its emergency and development arms to work more closely together, according to [OOSKAnews](#).

According to a [European press release](#), the policy is a game changer, particularly in terms of balancing development assistance and disaster planning. “This is a substantial shift in mentality and practice: from distributing aid to drought-affected people in order to survive until the next drought to investing in the long-run—building irrigation systems, promoting more resistant crops, helping pastoralists manage their livestock,” EU development commissioner Andris Piebalgs told [The Guardian](#).

Resilience is not only a more sustainable approach to disaster planning, it might also be more economically sound. The EU report found that putting four Euros toward disaster prevention saves an additional four to five Euros in post-disaster aid. An [Islamic Relief report](#) released a week before the EU policy had similar findings.

The benefits to resilience-based disaster planning are also being recognized in the Pacific. At a recent meeting on disaster risk management in Japan, a joint report released by Japan and the World Bank highlighted the importance of preventative disaster measures. According to [The Japan Times Online](#), the event also spotlighted personal resilience stories as told by a diverse group of leaders.

Just below the equator, the Pacific Risk Resilience program is underway, reports the [Solomon Times](#). The program targets four island nations—Fiji, Tonga, Vanuatu, and the Solomon Islands—and is designed to integrate risk management and development strategies and strengthen community resilience. It is a joint effort, backed by the UN Development Programme and the Australian Agency for International Development (AusAID).

“On top of the climate change adaptation issues all Pacific countries must face, Vanuatu, Solomon islands, Tonga and Fiji are the four countries most at risk of natural disasters in the Pacific” John Davidson, AusAID Minister-Counsellor Pacific, told the [Solomon Times](#). “Disaster risk management and climate change adaptation share a common focus—building community resilience.”

With a common goal in sight, the disaster community from the United States to the European Union (and everywhere in between), is moving resilience forward from an abstract concept to a set of best practices. These strategies will hopefully save lives, time, and money but only if we actually collect and act on the new resilience data.

“Enhancing the nation's resilience will not be easy, nor will it be cheap,” stated Susan Cutter, chair of the committee that authored the report. “But the urgency is there, and we need to begin the process now in order to build a national ethos that will make the nation safer, stronger, more secure, and more sustainable”

[Editor's note] There is a thoughtful argument for 'resilience' replacing the term 'prevention' in the October 2012 (v. 27, no. 4, p. 3-4) of the Australian Journal of Emergency Management. The title of the article by Stuart Ellis is *Opinion: Prevention is no longer a useful term in emergency management. Stuart Ellis AM says resilience is a fine example of the right term conveying the right message.* ♦

FEMA announces 2012 individual and community preparedness award winners

Release date: October 10, 2012

Release Number: HQ-12-103

WASHINGTON – The Federal Emergency Management Agency (FEMA) today announced the recipients of the 2012 Individual and Community Preparedness Awards. These awards recognize the innovative practices and achievements of individuals, Citizen Corps Councils, and non-profit, faith-based, and private sector organizations working throughout the nation to make our communities safer, stronger, and better prepared to manage any disaster or emergency event.

“It has been shown time and time again that after a disaster, the very first responders are our neighbors,” said FEMA Administrator Craig Fugate.

“The award recipients promote preparedness across America's communities – the bedrock of our national resiliency. I commend each and every one of the awardees for their service and innovation. They serve as a model for communities everywhere.”

Each applicant demonstrated their ability to engage the whole community through partnerships, achievements, and activities that took place from January 2011 to June 2012. For example, the American Red Cross Gateway to the Golden State Region chapter trained more than 16,000 individuals in life-saving skills, such as disaster preparedness, CPR, and basic first aid, and developed a cadre of more than 200 bilingual volunteers. The Texas State Citizen Corps Program trained Community Emergency Response Team (CERT) volunteers who were integrated into the response to the Bastrop Complex Fire last fall and North Texas tornadoes earlier this year.

Other awardees participated in emergency planning activities and established creative methods to address the needs of their communities. For example, North Dakota State University developed two Smartphone applications, one to address the needs of individuals and families affected by local flooding and one with information for residents stranded during a winter storm.

The Second Annual John D. Solomon Preparedness Award is being presented to Florida's Be Ready Alliance Coordinating for Emergencies (BRACE) for collaborative work as a team of nearly 500 disaster preparedness and response organizations, engaging in efforts that reach the business community, children and youth, under-served populations, faith-based organizations, first responders, and individuals with access and functional needs, and more. The John D. Solomon Preparedness Award is named for the late creator of the groundbreaking blog, *In Case of Emergency, Read Blog: A Citizen's Eye View Of Public Preparedness.* John's body of work was striking in its reporting, analysis, engagement and impact, in preparing the public, informing professionals, and effecting change in the public and private sectors. Administrator Fugate once stated that he “set the standard for what it meant to be part of our nation's emergency management team.”

All winners will be invited, as FEMA's honored guests, to a community roundtable event in Washington, D.C. During the roundtable the honorees will share their innovative and successful approaches to community preparedness with emergency management leadership.

FEMA congratulates the following awardees:

- Outstanding State Citizen Corps Council Initiatives Texas Citizen Corps (TX)
- Outstanding Local Citizen Corps Council Initiatives New York City Citizen Corps Council (NY)
- Outstanding Community Emergency Response Team (CERT) Initiatives CERT Program and Volunteers, City of Newport Beach (CA)
- Outstanding Achievement in Youth Preparedness Chinatown Community Development Center (CA)
- Preparing the Whole Community American Red Cross Gateway to the Golden State (CA)
- Promising Partnerships Partners in Preparedness (NY)
- Awareness to Action American Red Cross of the Poconos (PA)
- Innovative Use of Technology North Dakota State University Agriculture Communication (ND)
- Volunteer Integration

West Pierce County Fire and Rescue CERT
Program (WA)
Community Preparedness Heroes
Michael Parker (CA)
Mohamed Ali (WA)
Scott Ellis (NJ)
Second Annual Recipient of the *John D. Solomon
Preparedness Award*
Be Ready Alliance Coordinating for Emergencies
(BRACE) (FL)

The award winners were selected by a panel of leaders representing the whole community, including the National Emergency Management Association, the International Association of Emergency Managers, Target, the American Red Cross and FEMA.

For a description of the award categories, please see the [Application Guide](#).

Last Updated: October 10, 2012 - 11:07

From: <http://www.fema.gov/news-release/fema-announces-2012-individual-and-community-preparedness-award-winners> ♦

NEWS

The *TsuInfo Alert* webpage had 391 visits since 1-4-2012.

<http://www.dnr.wa.gov/ResearchScience/Topics/GeologyPublicationsLibrary/Pages/tsuinfo.aspx>

Google™ Underwater

Google Maps™ has launched, with Caitlin Seaview Survey, Google™ underwater...the first “underwater street view” enabling users to become virtual Jacques Cousteaus. For more information, <http://maps.google.com/ocean>

Disaster news redux: Tsunami of debris on U.S. shores

Sailing away: The approximately 1.5 million tons of marine debris from the 2011 Japanese tsunami began washing up on U.S. shores this spring. Although the wreckage from far away struck the whimsy of many, it was a reality check for states and municipalities charged with removing it from public beaches.

Although the National Oceanic and Atmospheric Administration (NOAA is the federal agency responsible for marine debris removal) offered \$250,000 in debris removal grants, it was impossible to estimate actual U.S. clean up costs because the type of debris to be removed, the amount washing ashore at a given time, and the type of shoreline to be cleaned all affect costs. That said, the agency tentatively put a \$4,300 per ton price tag on cleanup.

Waiting at anchor: Although not obligated to contribute to cleanup, Japan announced November 30 that it has set aside \$5 million to assist with debris in the United States. The funds will be used for “removal of debris, disposal fees, cleanup supplies, detection and monitoring,” according to a [NOAA statement](#).

“We are extremely grateful to Japan for its generous support to the American people, NOAA Administrator Jane Lubchenco stated. “The tragedy set in motion by the earthquake and tsunami continues to be tangible, but it brought our nations together. This gift is a powerful reminder of the goodwill, friendship and spirit of mutual support between our people.”

Alaska, Hawaii, Washington, Oregon and California, as well as portions of the Canadian coastline, were all affected by tsunami debris. Another \$1 million in cleanup funds has been promised to Canada, according to the *Japan Daily Press*.

Murky waters ahead: The Japanese funds will be distributed by NOAA based on need, according to the statement. In the meantime, winter is expected to see even more debris come ashore on the West Coast, and NOAA projects tsunami debris could continue arriving for the next year.

Those interested in following the debris trail can keep up with the trash at the [Marine Debris Monitoring and Assessment](#) web site.

From: Disaster Research 600, December 13, 2012, p. 5-6. (See also page 16)

Global Disaster Preparedness Center

In October, the American Red Cross, with the International Federation of Red Cross and Red Crescent Societies, launched the Global Disaster Preparedness Center, a reference center to support learning and knowledge sharing for disaster preparedness practitioners. Initiatives that will be focused on in the next year include an interactive website that will foster learning, exchange of materials and networking. In addition, a research program will fund studies on topics like the value of social media in public awareness and cost benefit analysis of disaster preparedness interventions.

From: Emergency Management, v. 7, no. 6, p. 14

FEMA Corps

The federal government unveiled FEMA Corps in Vicksburg, Miss., on September 19 [2012], inducting 240 enrollees into the emergency management program. FEMA Corps is a partnership between FEMA and the Corporation for National and Community Service that adds support for disaster response and recovery by new FEMA Corps teams

within AmeriCorps. Each team consists of 10 FEMA Corps members, 18- to 24-year olds who've signed up for the program.The goal is to accumulate 1,600 FEMA Corps team members in the next 18 months, each serving 10 months with the option for a second year.

From: From: Emergency Management, v. 7, no. 6, p. 14

Project Seal, the joint New Zealand and United States' tsunami bomb effort

Filmmaker Ray Waru discovered material in old military files (WWII) concerning the development (in 1944) of a 'tsunami bomb'. About 3700 bombs were detonated during the testing, proving that it would take about 2 million kilograms of explosives in a line 5 miles from shore to cause a 33-foot tsunami.

For more information:

<http://www.usatoday.com/story/news/world/2013/01/02/tsunami-bomb-us-new-zealand/1804483/>
<http://www.foxnews.com/tech/2013/01/02/us-reportedly-tested-secret-tsunami-bomb-off-new-zealand-coast/>
http://www.huffingtonpost.com/2013/01/02/tsunami-bomb-in-development-world-war-ii-top-secret-documents_n_2397856.html

PUBLICATIONS

Disaster resilience: A national imperative

"Disaster resilience is everyone's business," states a new report that calls for a series of local and national measures to increase resilience in the face of an increasingly costly toll from natural disasters to human lives and the economy."

For more information:

http://www.nap.edu/catalog.php?record_id=13457.

Natural Hazards Observer, v. 37, no. 3, p. 6-9

"The way forward—Overcoming barriers to disaster risk reduction" is an invited comment by Justin Moresco and Lori Peek. Read this article online at http://www.colorado.edu/hazards/o/archives/2013/jan13_observerweb.pdf. It's about public education and the obstacles to preparedness.

The study on which this article is based is available free from www.globalquakemodel.org/needs-drr-practitioners.

Natural Hazards Observer, v. 37, no. 3, p. 11-13

Another invited comment, by Joe Scanlon, is entitled "So what do we really learn from experience?" Very thoughtful and informative.

http://www.colorado.edu/hazards/o/archives/2013/jan13_observerweb.pdf.

WSSPC E-Newsletter

The Summer 2012 edition is available online: http://www.wsspc.org/news/news_files/eNews_Summer12.pdf

Natural Hazards Observer

The latest edition of the *Natural Hazards Observer* is online AND in print! The November issue features articles "Many reactor sites face tsunami risks" and "What is resilience?"

For those of you who would rather get the print edition, *Observer* subscriptions are only \$15 per year. Those interested in subscribing can sign up on the subscription page (<http://www.colorado.edu/hazards/o/>) using a credit card, or be invoiced later.

The January 2013 issue is available online and in print, also: <http://www.colorado.edu/hazards/o/archives/pastobservers.html#issues2013>

ShakeCast Quarterly

The inaugural U.S. Geological Survey *ShakeCast Quarterly* newsletter is now available for download at https://www.sciencebase.gov/confluence/download/attachments/220102760/Summer_2012_SCO.pdf.

ShakeCast is an application for automating ShakeMap delivery to critical users and for facilitating notification of shaking levels at user-selected facilities. ShakeMap sites provide near real-time maps of ground motion and shaking intensity following significant earthquakes. These maps are used by federal, state, and local organizations, both public and private, for post-earthquake response and recovery, preparedness exercises, and disaster planning.

The *ShakeCast Quarterly* features profiles of prominent ShakeCast users and their systems, upcoming features and capabilities, tips and tricks to optimize your system, new support website announcements, and more.

To receive future issues, email shakecast-help@usgs.gov.

From: EERI Newsletter, v. 46, no. 9, p. 8.

WEBSITES/BLOGS

<http://www.abanow.org/wordpress/wp-content/themes/ABANow/wp-content/uploads/resolution-pdfs/MY2010/summaries/103A-adopted-as->

revised.pdf?utm_source=NHC+Master+List&utm_campaign=dbf77d9ea5-DR597&utm_medium=email
Model Act Governing Standards for the Care and Disposition of Disaster Animals

Disasters such as Hurricane Katrina have driven home how our relationship with animals impacts us before and after disasters. Leaving or losing an animal during an evacuation or disaster can be devastating and reuniting can sometimes be a challenge. That's why this model act was created to by the American Bar Association to serve as guideline for states to create policies around the disposition of rescued animals. The model set out parameters that require a shelter to hold pets for 30 days—so they can hopefully be reunited with their owners.

From: Disaster Research 597, October 18, 2012

Recovery News

A blog from the American Planning Association, <http://blogs.planning.org/postdisaster/>

APA is providing an important resource for disaster recovery and research. Topics covered since the launch include disasters and historic preservation, tracking resident participation in hazard planning, the transitions made in Christchurch, New Zealand, following the quake there, and many others. The blog is updated about every two weeks.

From: Natural Hazards Observer, v. 37, no. 2, p. 16

<http://www.ehs.unu.edu/file/get/10570.pdf>

Addressing loss and damage in the context of social vulnerability and resilience

This report looks at how societies respond to climate change-induced hazards and disasters and how policy and science frameworks can work toward addressing loss and risk. The report, published by the UN University Institute for Environment and Human Security, is based on knowledge gleaned from the Keystone Conference on social vulnerability in the context of climate adaptation, held in Bonn, Germany, in October. Report recommendations include considering loss and damage as part of a system where climate change shapes social processes, including social vulnerability and resilience in loss discussions, and realizing the solutions to vulnerability can also be found in climate-social interactions.

http://ncdmph.usuhs.edu/KnowledgeLearning/2012-Learning1.htm?utm_source=NHC+Master+List&utm_campaign=f477eade5b-DR599&utm_medium=email

Learning1.htm?utm_source=NHC+Master+List&utm_campaign=f477eade5b-DR599&utm_medium=email

Tracking and Reunification of Children in a Disaster

This online lesson will give healthcare workers a background in handling children who've become separated from their parents in a disaster. From creating general awareness of responder responsibility, to identifying lost children, to knowing what resources are available to help find parents, this tool will help guide emergency workers in the field. The lesson, created by the National Center for Disaster Medicine and Public Health, is also eligible for a variety of continuing education credits.

From: Disaster Research 599, November 29, 2012

http://www.tlaer.org/?utm_source=NHC+Master+List&utm_campaign=f477eade5b-DR599&utm_medium=email

Technical Large Animal Emergency Rescue

Anyone who has seen the challenges of rescuing household pets during disasters would likely be daunted at the prospect of saving something bigger. Technical Large Animal Emergency Rescue might just be able to overcome that fear. TLAER offers courses to emergency personnel on how to safely rescue trapped or injured horses and cattle from disaster and emergency zones—including education on how to prevent entrapment. Visit the site to learn more about how to form large animal rescue response teams, find training and education resources, and see pictures of real life rescues.

From: Disaster Research 599, November 29, 2012

http://saludydesastres.info/index.php?lang=en&utm_source=NHC+Master+List&utm_campaign=f477eade5b-DR599&utm_medium=email

Knowledge Center on Public Health and Disasters

If you ever had a question relating to the intersection of public health and disasters, this Pan American Health Organization Web site probably has the answer. With information arranged in easy-to-access modules, the site spans everything from basic concepts and terminology to global trends and strategies to reduce disaster risk. The latest PAHO publications and opportunities for classes and training are also featured.

From: Disaster Research 599, November 29, 2012

<http://www.lrc.fema.gov/allhazarts.html>

All-hazards articles in the scholarly literature (ALL-HAZARTS-NETC LRC)

An index to the scholarly periodical literature (some with full-text)—this resource page allows you to search and explore the unique collection of over 18, 000 scholarly/peer-reviewed articles covering All-Hazards topics.

From: FEMA's Higher Education Program Bits and Piece, Dec. 7, 2012

CONFERENCES/SYMPOSIA/EXERCISES

Feb. 7, 2013

Get ready to ShakeOut on February 7. You're invited to join more than one million people who will drop, cover, and hold during the Great Central U.S. ShakeOut on Feb. 7, 2013 at 10:15 AM, local time. This regional earthquake drill will include participants across nine states (Alabama, Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri, Oklahoma, and Tennessee).

For more information about what to do before, during and after an earthquake, visit <http://www.ready.gov/earthquakes>

From: fema@service.govdelivery.com
December 7, 2012

March 20-22, 2013

The University of New Orleans CHART, New Orleans, Louisiana

This conference will address the risk assessment and mitigation planning challenges facing universities. Topics include an introduction to multi-hazard mitigation planning, campus emergency management, the differences between disaster "resistance" and "resilience," faculty's role in building campus resilience, and how to conduct detailed vulnerability assessments of campus buildings.

<http://crescentcityevents.com/lindyboggs/>

April 17-19, 2013

Seismological Society of America annual meeting, Salt Lake City, UT
<http://www.seismosoc.org/meetings/>

April 30 – May 2, 2014

Seismological Society of America annual meeting, Anchorage, AK
<http://www.seismosoc.org/meetings/>

SURVEYS

Survey on emergency communications and people with disabilities

This survey will collect data about how people with disabilities use 911 services and emergency alerts. The effort, conducted by the [Wireless Rehabilitation Engineering Research Center](#), will be shared with emergency response professionals with the aim of improving emergency communication for the disabled (and if that's not enough incentive, sur-

vey takers can also qualify to win a \$100 Amazon gift certificate).

https://www.surveymonkey.com/s/Emergency-Communication-2012?utm_source=Industry/CAN%20Newsletter%2011/5/2012&utm_campaign=Re%3AWireless%2011/5/2012&utm_medium=email
From: Disaster Research 600, December 13, 2012, p. 9 ♦

Policy and prediction

Editor's comments by Janice Kaspersen
Erosion Control, v. 19, no. 6, p. 6
Reprinted with permission

A law passed in August in North Carolina has been generating controversy, but also some interesting discussion about how to incorporate uncertain predictions into policymaking.

The law, known as House Bill 819, bans the state from basing its coastal development policies on recent predictions of sea level rise. North Carolina's Coastal Resources Commission has predicted that sea level will rise by 39 inches over the next century. Some within the state object to that number—primarily the development community, but also some homeowners who fear that their insurance rates may go up, as well as coastal property owners who have not yet built on their land and are afraid that new regulations could prohibit them from doing so. HB 819 originally dealt with development permits, but under pressure from these groups, the provision about sea-level-rise predictions was added later.

One of the law's strongest supporters is president of a coastal development group who says he does not believe that global warming is occurring; he and other supporters say the Coastal Resources Commission's forecast is extreme and based on uncertain science, and they want to wait until more reliable models are available before setting a policy that would limit development across about 2,000 square miles of land. On the other hand, opponents of the law cite findings from the US Geological Survey—covered in our last issue (http://www.erosioncontrol.com/EC/Articles/Understanding_SeaLevel_Rise_18040.aspx)--that sea level rise along much of the East Coast is occurring faster than the world average. The USGS says the accelerated rate of rise is likely to continue.

North Carolina's law has been mocked by many in the scientific community and even on Comedy Central. On the face of it, simply decreeing that a tough problem doesn't exist seems like hiding one's head in the (beach) sand. But as easy a target as this law might seem, it's worth a closer look because it

reflects the uncertainty inherent in almost all policy-making. Waiting until all the facts are in often isn't an option—and even if it were, the facts can change. It may be obvious that we shouldn't build in a floodplain, but we sometimes do it anyway; it's clear with hindsight where the floodplain lies, but perhaps conditions have changed—the dam we thought was secure really wasn't, or the channel that had never flooded before does now because of all that development occurred upstream. If flooding doesn't occur, though, it's hard to prove a negative and say whether our policies were too conservative.

Some jurisdictions have already made plans and preparations for dealing with sea level rise; for many of them, the ocean seems closer than for others, and the predictions have a greater feeling of certainty. Olympia WA, for example—whose downtown area, built on fill material, is only a foot above the high-tide mark even now—has been working since 2010 to figure out how to protect itself. The city council directed engineers to come up with strategies for coping with 50 inches of rise, and according to some predictions, the increase over the next century could be even greater.

North Carolina's governor, who allowed HB 819 to pass, has now urged the state to take another look at the situation and “develop an approach that gives state agencies the flexibility to take an appropriate action in response to sea level rise,” according to a statement issued shortly after the bill became law. ♦

Many reactor sites face tsunami risk

Natural Hazards Observer, v. 37, no. 2, November 2012

There are 23 nuclear reactor sites with a total of 74 reactors located on them which are at risk of being hit by tsunamis, according to research by Joaquin Rodriguez-Vidal of Spain's University of Huelva and colleagues.

Virtually all of the at-risk reactors are located on shorelines in South and Southeast Asia, according to “Civil nuclear power risk of tsunamis,” which appeared in the journal *Natural Hazards* (DOI: 10.1007/s11069-012-0162-0).

Of the 23 total sites, 13, with 29 reactors, are active. Four sites totaling 20 reactors are being expanded with nine new reactors. There are seven new sites with 16 reactors under construction.

“Twenty-seven of the 64 nuclear reactors currently under construction in the world are located in China, giving an indication of the ongoing massive investment in nuclear power in this country. More importantly, 19 (including 2 in Taiwan) of these 27 reactors are being built in the at risk areas identified

in our study. Rapid expansion of this sensitive technology in at risk shorelines underlines the potential threats posed by a large tsunami hitting any of these locations,” the paper says.

The researchers say that because of the uncertainties surrounding nukes and tsunamis, especially in light of the recent disaster in Japan, “a more conservative approach may be appropriate to achieve sustainable human development.” They recommend an all-hazards approach to siting, creation of multi-hazard maps, and consideration of relevant historical and geological evidence.

The Japanese Fukushima disaster happened in a nation with very high levels of technical competence and economic resources. “Should a similar event occur in a country that is less well-equipped to manage the catastrophic consequences of such a coincidence of events, the impact will be far more serious for the world,” the authors write.

Radiation can be transported considerable distances after a major accident, posing globally important risks, according to a May 2012 paper in *Atmospheric Chemistry and Physics* (doi:10.5194/acp-12-4245-2012). J. Lillieveld and colleagues from the Max Planck Institute for Chemistry found, “In the event of a major reactor accident of any nuclear power plant worldwide, more than 90 percent of emitted ¹³⁷Cs would be transported beyond 50 kilometers and about 50 percent beyond 1,000 kilometers before being deposited. This corroborates that such accidents have large-scale and transboundary impacts.”

The researchers use ¹³⁷Cs—Cesium 137—as a proxy for radiation dispersal. They did not analyze the fallout patterns from the recent Fukushima accident, but data from other important plant failures like Three Mile Island and Chernobyl.

[Editor's note: A great issue; read the whole thing at: http://www.colorado.edu/hazards/o/archives/2012/nov12_observerweb.pdf] ♦

Preparing for repopulation—Lessons learned from repopulating Louisiana parishes after Katrina lead to the creation of comprehensive re-entry plans

By Elaine Pittman

From: *Emergency Management*, v. 6, no. 6, p. 52, 54, 2011

www.emergencymgmt.com

Reprinted with permission

More than 1 million people were evacuated from Louisiana in preparation for the imminent wrath of Hurricane Katrina in 2005. Of those evacuees, more than 330,000 were from Jefferson Parish

[Editor's note: "parish" is equivalent to "county"], which includes many of New Orleans' suburbs and saw about 75 percent of its population flee from the storm. But after the hurricane passed and the government began assessing damage, hundreds of thousands of residents wanted to re-enter the area to see how their homes and businesses fared.

After Hurricane Katrina, however, communities weren't ready for an influx of residents. Aspects critical to supporting the population, like utilities, food supplies, fuel distributors and financial institutions, needed to be restored.

Cherreen Gegenheimer, the business and economic development liaison for Jefferson Parish, said within a week of Katrina's devastation, parish officials discussed how to re-establish businesses in the community. "The ultimate goal, of course, is to bring your entire population back in as soon as living conditions are sustainable," Gegenheimer said, "but if you can't do that immediately, how are you going to get the right people back in and when?"

The government developed an on-the-fly plan, she said, because no one had considered the possibility of evacuating everyone in the community and then repopulating the parish.

But as a mix of first responders, residents, contractors, and business owners and representatives tried to return to the area, highways were filled with stand-still traffic. Two locations in Baton Rouge were staffed by a contractor that issued paper credentials, which allowed business representatives re-entering the area to travel as needed to re-establish the business or service. Law enforcement verified that people in the parish post-Katrina were allowed to be there, since it wasn't safe for residents to return.

The makeshift plan got Jefferson Parish through Katrina's aftermath, but it also illustrated the importance of preparing for repopulation following large-scale disaster that require a mass evacuation.

"In the months after Katrina, especially by early '06, businesses were coming to us saying, 'We have caught our breath, our feet are back on the ground, but every year there is a hurricane season. What's going to be different next time?'" Gegenheimer said.

One thing businesses requested was a codified plan—something set up in advance that could be implemented following a mass evacuation. Jefferson Parish rolled out a draft plan for the 2006 hurricane season, which runs June through November, in which it tracked the area's businesses in an Excel spreadsheet. But that didn't prove to be comprehensive enough. "Our 2000 census had us at about 455,000 people and probably 30,000 businesses—and you can't do that in Excel," Gegenheimer said.

In summer 2006, Jefferson Parish contacted the New Orleans' Urban Areas Security Initiative (UASI) to gauge its interest in developing a regional plan. Many of the parish's emergency response service providers also have contracts with surrounding parishes so it made sense to have a regional initiative. The areas' plans aren't identical, but they do share the ideology of returning critical functions and businesses based on order of importance.

"Anyone who had worked in the immediate aftermath of Katrina saw a confused set of complex circumstances on the ground without any kind of guidance to direct people and the appropriate response," said Col. Robert Williams, program manager of New Orleans' UASI. "More importantly was how to get the needed services back into the city in a sequenced way that would increase safety and sustain life support in an orderly fashion."

Phases of re-entry

Jefferson Parish created a tiered re-entry plan composed of three levels. The system first allows primary infrastructure and major utility companies, as well as predesignated government staff and contractors, back into the area (tier one); next are assessment teams representing major companies and employers (tier two); and last is the return of business owners and designated employees whose businesses are vital to the return of citizens and the parish's economy (tier three).

The parish enlisted an IT contractor to develop a software program that aligned with the tier-based re-entry process. The final product is the JumpStart Jefferson Business Continuity System—a website where businesses can register their information, are assigned to a tier that's correlated to how important the business is to preparing the community for citizens, and receive an authorization placard for their vehicle to re-enter the community.

Businesses and industries apply for tier two or three classification but those who believe they should re-enter first ask to be placed in tier one. Also, the program automatically recognizes and sends certain industry applications, like hospitals and other critical infrastructure, to a parish administrator to be reviewed for inclusion in tier one.

Following a mass evacuation, when officials are ready for a tier to return, it's announced through e-mails, government web portals and the media. The placards are visibly displayed on incoming vehicles' dashboards for those managing the re-entry route to see.

The placards are printed on tamperproof paper with unique designs and large letters that are color-coded according to its tier, Williams said, but individual employees re-entering aren't issued placards.

“Everybody in the vehicle must have an ID that links them to the placard that the business was issued, so that we can make sure everyone is playing fair,” he said.

Although placards allow people to re-enter the disaster area, they are only allowed to access locations that are necessary to their work. “Tiers one and two don’t provide access to your place of residence,” Gegenheimer said. “this is strictly to your place of business and in and around the parish to take care of what your business is. In terms of use, the businesses have agreed that they take full responsibility for sustaining the employees they bring in.”

Working together, New Orleans, Jefferson Parish, and other nearby areas offer regional placards that allow individuals with legitimate business needs in other parishes to travel back and forth. Law enforcement in the disaster area can easily identify regional placards, because they have an “R” after the tier number, according to Gegenheimer.

Testing the plan

In 2008, Jefferson Parish tested the re-entry plan after the evacuation of its coastal communities in preparation for Hurricane Gustav. Following the storm, the parish president called for tier one re-entry, and critical businesses and functions were brought back into the area using the placard system. Within 24 hours the president called for everyone to re-enter, Gegenheimer said, “but the people who had to use it were extremely pleased.”

The re-entry plan has received positive feedback so far, and there are plans to make it more comprehensive in the future. Currently there’s no way to track which businesses and functions actually re-enter the area, but Williams said New Orleans is considering adding a drive-through point with a card reader that would scan a credential and track those who enter the disaster area.

More importantly, Gegenheimer said, is the ability to get people back into the area quickly with as little congestion on the main roads as possible.

For governments interested in learning more about the re-entry plan and the web-based system, visit

<http://www.jeffparish.net/index.aspx?page=2117>

New Orleans’ re-entry tiers

TIER ONE—Response support includes providers of critical services to the government and public agencies including: primary critical infrastructure and major utility companies and their pre-designated subcontractors; government contractors

and their subcontractors; and pre-designated damage recovery assessment teams from businesses.

TIER TWO—Recovery support comprises core assessment teams of major employees or businesses deemed essential for the future return of residents or the parish’s economic vitality.

TIER THREE—Repopulation support includes essential retail businesses and their employees that are required for the future return of citizens. For example, accountants, appliance sales and service, banking, churches, construction services, insurance, retail groceries and transportation.

Source: New Orleans Post-Disaster Phased Re-entry Plan. ♦

Material added to the NTHMP Library January – February 2013

Note: These, and all our tsunami materials, are included in the online (searchable) catalog at <http://www.dnr.wa.gov/ResearchScience/Topics/Geology/PublicationsLibrary/Pages/washbib.aspx>. Click on SEARCH DATABASE, then type ‘tsunamis’ in the Subject field to get a full listing of all the tsunami reports and maps in the collection.

Annunziato; Franchello, G.; De Groeve, T., 2012, Response of the GDACS system to the Tohoku earthquake and tsunami of 11 March 2011: Science of Tsunami Hazards, v. 31, no. 4, p. 283-296.

Comfort, L. K.; Znati, T.; Voortman, M.; Xerandy; Freitag, L. E., 2012, Early detection of near-field tsunamis using underwater sensor networks: Science of Tsunami Hazards, v. 31, no. 4, p. 231-243.

Goto, Kazuhisa; Sugawara, Daisuke; Abe, Tomoya; Haraguchi, Tsuyoshi; Fujino, Shigehiro, 2012, Liquefaction as an important source of the A.D. 2011 Tohoku-oki tsunami deposits at Sendai Plain, Japan: Geology, v. 40, no. 10, p. 887-890.

Horrillo, Juan; Knight, William; Kowalik, Zygmunt, 2012, Tsunami propagation over the north Pacific--Dispersive and nondispersive models: Science of Tsunami Hazards, v. 31, no. 3, p. 154-177.

Iacono, Claudio Lo; Gracia, Eulalia; Zaniboni, Filippo; Pagnoni, Gianluca; Tinti, Stefano; Bartolome, Rafael; Masson, Douglas G.; Wynn, Russell B.; Lourenco, Nuno; de Abreu, Manuel Pinto; Danobeitia, Juan Jose; Zitellini, Nevio, 2012, Large, deepwater slope failures--Implications for landslide-generated tsunamis: Geology, v. 40, no. 10, p. 931-934.

Kelman, Ilan; Dodds, Rachel, 2009, Developing a code of ethics for disaster tourism: *International Journal of Mass Emergencies and Disasters*, v. 27, no. 3, p. 272-296.

Lente, Jenna Louise; Mencin, David, 2012, Yellowstone Lake seiche--Its causes and implications regarding the caldera [abstract]: *Geological Society of America Abstracts with Programs*, v. 44, no. 7, p. 76.

Moreano, H.; Arreaga, P.; Nath, J., 2012, The 2010 Chilean tsunami--Behavior on the Ecuadorian coast and the Galapagos Islands: *Science of Tsunami Hazards*, v. 31, no. 3, p. 199-208.

Muhari, A.; Muck, M.; Diposaptono, S.; Spahn, H., 2012, Tsunami mitigation planning in Pacitan, Indonesia--A review of existing efforts and ways ahead: *Science of Tsunami Hazards*, v. 31, no. 4, p. 244-267.

Natural Hazards Observer, 2012, Many reactor sites face tsunami risk: *Natural Hazards Observer*, v. 37, no. 2, p. 3-4.

Pararas-Carayannis, George, 2012, Potential of tsunami generation along the Colombia/Ecuador subduction margin and the Dolores-Guayaquil mega-thrust: *Science of Tsunami Hazards*, v. 31, no. 3, p. 209-230.

Sever, Megan, 2012, Tsunami debris reaches U.S. coasts: *Earth*, v. 57, no. 12, p. 39.

Shevchenko, G. V.; Ivelskaya, T. N., 2012, The Tohoku tsunami of 11 March 2011 as recorded on the Russian far east: *Science of Tsunami Hazards*, v. 31, no. 4, p. 268-282.

Showstack, Randy, 2012, ShakeOut drill emphasizes importance of earthquake preparedness, education: *Eos (American Geophysical Union Transactions)*, v. 93, no. 44, p. 439.

Trusdell, Frank A.; Chadderton, Amy; Hinchliffe, Graham; Hara, Andrew; Patenge, Brent, 2012, Tohoku-Oki earthquake tsunami runup and inundation data for sites around the island of Hawai'i: *U.S. Geological Survey Open-File Report 2012-1229*, 36 p.

Vithanage, Meththika; Engesgaard, Peter; Villholth, Karen G.; Jensen, Karsten H., 2012, The effects of the 2004 tsunami on a coastal aquifer in Sr. Lanka: *Ground Water*, v. 50, no. 5, p. 704-714.

Washington Military Department, Emergency Management Division, 2006, Disaster response guidebook for hotels and motels on Washington's coast: Washington Military Department, Emergency Management Division, 1 v.

Watson, Amanda H. A., 2012, Tsunami alert--The mobile phone difference: *Australian Journal of Emergency Management*, v. 27, no. 4, p. 46-50.

Williams, Shaun; Davies, Tim; Cole, Jim, 2012, Catastrophic flank collapse on Ta'u Island and subsequent tsunami--Has this occurred during the last 170 years?: *Science of Tsunami Hazards*, v. 31, no. 3, p. 178-198.

Zoback, Mary Lou, 2012, Increasing resilience--A national imperative: *Earth*, v. 57, no. 12, p. 26-27. ♦

Training video about emergency response on tribal lands released

“Strength and Resiliency: Emergency Preparedness for Tribal Leaders and Program Directors—Your roles and responsibilities”

By Monte Fronk

Published Jan. 15, 2013

The 30-minute video “Strength and Resiliency: Emergency Preparedness for Tribal Leaders and Program Directors—Your roles and responsibilities” came from the last 5 years that I have been hearing the same concern from tribal emergency managers who report difficulty getting enough time with tribally elected officials and/or program directors to effectively explain how to deal with emergencies on tribal lands. Unlike city or county elected officials, tribal leaders often spend a great amount of time traveling to meetings throughout the United States. Many of them spend a great deal of time at meetings with state elected officials, members of Congress as well as their staff, heads of federal agencies and other tribal leaders. They are tireless advocates for state and federal policy changes to improve the lives of their tribal members and to ensure the right to tribal self-determination is fully realized—but very clearly very busy.

<http://www.firefighternation.com/videos/trainin-g-emergency-response-tribal-lands>

<http://www.firefighternation.com/article/trainin-g-0/training-video-about-emergency-response-tribal-lands-released> ♦

Black Emergency Managers Association (BEMA)

Mission:

- Provide information, networking, professional development opportunities to African-American emergency managers.
- To advance the emergency management and homeland security profession within African-American communities.
- To assist and ensure African-American and minority community involvement in all phases of emergency management to include grant opportunities, training, preparedness, etc. with emphasis on the long-term recovery of the community.
- To provide mentoring opportunities to high school and college level students so that these individuals will return with skills for their communities.

BEMA is an 'all inclusive' association and does not exclude any individual, organization, or entity that adheres to our primary mission and vision.

To join, send an email to

BlackEmergManagers@verizon.net

From: FEMA's Higher Education Program Bits and Pieces, January 25, 2013 ♦

Japan's tsunami created large dunes on the ocean floor

By George Dvorsky

The Tohoku-oki earthquake and tsunami brought unimaginable devastation to the coastal areas of Japan in March 2011. But as a new study in *Marine Geology* suggests, it also reshaped the ocean floor, forming large underwater dunes as the massive waves rolled into the eastern seaboard, and then slowly pulled away.

Full story: <http://io9.com/5976697/japans-tsunami-created-large-dunes-on-the-ocean-floor-+-ready> ♦

Find the elevation of your house

Learn the elevation of your house, or any place in Sitka, Southeast or the world at geoplaner.com.

Scroll up to enter your address with city and state in the box near the upper left side of the page. Once in the area you want you can drag the red balloon to any location.

From: <http://www.kcaw.org/2013/01/14/whats-your-tsunami-story/> ♦

Free tsunami training: Training the trainers

South Bend, Washington – The Pacific County Emergency Management Agency (PCEMA) will be

offering a free tsunami public education course on February 14, 2013 at the Grays Harbor College Columbia Education Center (208 Advent Ave. S.E.) in Ilwaco.

Full story:

<http://kbkw.com/modules/news/article.php?storyid=5012> ♦

JAPANESE TSUNAMI DEBRIS update

Tsunami debris problem gets worse in Alaska, with little clean up funding in sight

Full article, with photos, at

<http://www.alaskapublic.org/2013/01/30/tsunami-debris-problem-gets-worse-in-alaska-with-little-clean-up-funding-in-sight/>

Wave of styrofoam from 2011 tsunami threatens Alaska environment

Full story at

<http://www.reuters.com/article/2013/01/30/us-usa-tsunami-styrofoam-idUSBRE90T06F20130130>

Possible tsunami debris found off Nohili Point [Hawaii]

Full article at

http://thegardenisland.com/news/local/possible-tsunami-debris-found-off-nohili-point/article_fd645fbc-6b85-11e2-b75c-0019bb2963f4.html

More possible tsunami debris found along Washington Coast

Full article, with photos, at

<http://kxro.wordpress.com/2013/01/31/more-possible-tsunami-debris-found-along-washington-coast/>

Japan tsunami debris: West Coast braces for more flotsam in winter

Full article at:

http://www.huffingtonpost.com/2012/12/25/japan-tsunami-debris-west-coast-_n_2362525.html

Japan tsunami marine debris

Information about current sitings and place to report new debris findings:

<http://marinedebris.noaa.gov/tsunamidebris/>♦



INFREQUENTLY ASKED QUESTIONS

According to a recent European study, how many nuclear power plants are susceptible to destructive tsunami waves?

The 23 facilities on the list (including Fukushima) house a total of 74 nuclear reactors. Thirteen of the plants are active, while the others are either nearing completion or being expanded to house more reactors.

The researchers say East and Southeast Asia are at the greatest risk of a nuclear crisis triggered by a tsunami because of the rise of atomic power stations in the region, especially in China, which houses 27 of the world's 64 nuclear reactors currently under construction.

From: <http://news.discovery.com/earth/nuclear-plants-at-tsunami-risk-120924.html>

What are the three types of emergency alerts that can be sent to eligible mobile phones?

Presidential Alerts---issued by the President or a designee

Imminent Threat Alerts...issued when severe man-made or natural disasters are a looming threat to life and property

AMBER Alerts help law enforcement search for abducted children.

From: FEMA (fema@service.govdelivery.com) January 22, 2013.

Who wrote the book on best practices for emergency vehicle visibility?

EMMITSBURG, Md. – The U.S. Fire Administration (USFA), supported by the National Institute of Justice (NIJ), and in partnership with the Cumberland Valley Volunteer Firemen's Association's (CVVFA) Emergency Responder Safety Institute, announces availability of a guide to help emergency services departments increase the visibility of emergency vehicles to motorists in order to keep responders safe during roadway operations.

"The USFA staff is pleased to release this guide in support of our goal to reduce the number of emergency vehicle crashes and injuries to all emergency first responders," said U.S. Fire Administrator Ernest Mitchell. "We are grateful for NIJ's continued support of this effort and for the work of the CVVFA to the benefit of the fire service, EMS and law enforcement personnel at work on our nation's roadways."

Vehicle Marking and Technology for Increased Highway Visibility – A Reference Guide for Decision-Makers provides information on best practices in the application of various arrangements of emergency warning devices, creative use of retro reflective decal markings and other innovative designs - all with the intent of increasing the visibility of emergency vehicles to motorists approaching them. It focuses on emergency vehicles not covered by existing standards in this area.

"Enhancing the operational safety of law enforcement officers and firefighters is a major priority of NIJ," said John H. Laub, Director of the National Institute of Justice. "We place a premium on partnerships like this one with the USFA because they multiply our ability to prevent accidents and save lives."

"CVVFA is pleased to release the results of this project that will support the decision makers in local fire, police and EMS departments on ways to enhance the emergency vehicle and roadway operations safety of their organizations," said CVVFA President Steven L. Haines. "We are grateful for the support of both USFA and NIJ in this effort to enhance the safety of emergency responders."

Further information on USFA's emergency vehicle and roadway safety research initiatives may be found on the [USFA website](#).

Link to pdf version of the book: <http://www.usfa.fema.gov/media/press/2013releases/011713a.shtm> ♦

A category we'll be adding to the NEWS section in the next issue: Apps (Thanks to Tara Salzer for finding these for *TsuInfo Alert*)

First aid app

The official American Red Cross First Aid app puts expert advice for everyday emergencies in your hand. Available for iPhone and Android devices, the American Red Cross First Aid app gives you instant access to the information you need to know to handle the most common first aid emergencies. With videos, interactive quizzes and simple step-by-step advice it's never been easier to know first aid.

From: <http://www.redcross.org/mobile-apps/first-aid-app>

Shelter Finder app

Be Prepared

When disaster strikes know when and where shelters have been opened to provide assistance.

Map View

Offered by the American Red Cross, the application maps locations and shelter details across the United States. Zoom in to the local area. View shelter details: the agency managing the shelter, capacity of the shelter and current population, the associated disaster event and the specific shelter address and location.

List View & Disaster News

View open shelters by state, jump to the latest disaster information via the Disaster Online Newsroom, and donate to help the American Red Cross respond to those in need.

National Shelter System

The application uses data about open shelters from the American Red Cross National Shelter System (NSS). The NSS contains information about 60,000 potential disaster facilities and is used to track and report on shelter information during disasters. The NSS enables emergency managers and disaster relief workers to identify relevant information for all shelters in use and to develop effective response strategies before disasters strike. NSS information is available to assist FEMA, state and local emergency management officials, non-profit, charitable, and faith-based organizations manage and deploy effective mass care services.

Regularly Updated

Shelter information is updated from the NSS every 30 minutes. Current populations are typically updated every noon and midnight when shelters are open and providing assistance. This application was contributed to the American Red Cross by VisionLink® in Boulder, CO, providing enterprise software (CommunityOS™) for multi-agency client and case management, community resource management and referral, and disaster relief solutions.

From: <http://www.redcross.org/mobile-apps/shelter-finder-app>

ICE: Emergency contact app

"ICE: Emergency Contact" is an application that helps people who have a problem or who are victims of accidents. It is based on the ICE program that consists in saving a contact who is named "ICE" in your contact list. This contact has medical information about you.

In this application, you can save useful information for rescue workers (allergy, medication, condition, identity, organ donor, blood type ...) and contact people "in case of emergency [ICE]".

Thus, with only one click on your screen, send SMS alerts to all your saved contacts and call rescue workers immediately ! Your contacts will know where you are and will be able to help you !

Place a widget on your homescreen to alert your circle of contacts (compatible with alternative lockscreens like ScreenLocker).

This application was developed from the advice of an EMT.

From:

<https://play.google.com/store/apps/details?id=com.alexyu.android.ice&hl=en> ♦

Tsunami caused long-term ecosystem change in the Caribbean

Overwash deposits point to major wave event more than 3,000 years ago

A detailed analysis of sediments from the island of Bonaire in the Caribbean presents convincing evidence for an extraordinary wave impact dating back some 3,300 years, even though no historical records of tsunamis exist for this island. Of particular interest are the consequences this large wave impact had on the island's ecosystem. The sediments studied by the scientists suggested that this tsunami entirely changed the coastal ecosystem and sedimentation patterns in the area. The work by Dr. Max Engel and colleagues, from the University of Köln in Germany, is published online in Springer's journal *Naturwissenschaften - The Science of Nature*. The Caribbean region is highly vulnerable to coastal hazards, including tropical cyclones, earthquakes, volcanoes, and tsunamis. Even though the island of Bonaire has not experienced a tsunami during the past 500 years, which is the period of historical documentation, overwash deposits from a coastal lagoon provide evidence for at least one such event in prehistory.

Engel and colleagues investigated sediment cores from Washington-Slagbaai National Park. They looked specifically at grain size distribution, carbonate content, organic matter, magnetic susceptibility and fauna. Their analyses showed that the sediments had criteria typically linked with tsunami deposits, consistent with a tsunami with a maximum age of 3,300 years. The authors conclude: "This single catastrophic event is of long-term ecological significance. Formation of a barrier of coral

rubble was triggered by the tsunami separating a former inland bay from the open sea and turning it into a highly saline lagoon which persists until today. Further studies of the geology of tsunamis, using well-dated deposits, are required over the entire Caribbean to reconstruct reliable patterns of magnitude, frequency and spatial occurrence of tsunami events and their environmental impact."

Reference:

Engel M et al (2012). A prehistoric tsunami induced long-lasting ecosystem changes on a semi-arid tropical island - the case of Boka Bartol (Bonaire, Leeward Antilles). *Naturwissenschaften – The Science of Nature*; DOI 10.1007/s00114-012-0993-2

Department of Emergency Management announces roll-out of the Oahu Emergency Evacuation plan project

The city's Department of Emergency Management announced Wednesday [Dec. 12, 2012] that it will roll out the Oahu Emergency Evacuation Plan Project beginning early in 2013.

TSUNAMI ZONE, EVACUATION ROUTE SIGNS PART OF STATEWIDE PLAN



The recent tsunami warnings have triggered a review of the emergency response by government and coastal communities across the state.

The \$500,000 one-year project funded by a grant from the Oahu Metropolitan Planning Organization with match funding from the City and County of Honolulu will identify high-risk coastal evacuation areas on Oahu and develop a strategy to designate evacuation routes and placement of evacuation signage.

The project team consists of six firms led by Robert Collins of Atkins North America, Inc. who will provide project management. Other team members include Group 70 International, Solutions Pacific, LLC., Martin and Chock, Inc., University of Hawaii Sea Grant and Dewberry and Davis, LLC.

Project objectives include performing a gap analysis that addresses a community tsunami risk assessment, evacuation capability, behavioral science and strategies to minimize traffic congestion.

An integral part of this project includes public outreach meetings in evacuation high-risk areas to seek planning input from local organizations and Oahu residents. "We recognize that our residents have been requesting coastal evacuation routes and evacuation signage for quite some time," said Melvin Kaku, director for the Department of Emergency Management. "The project, infor-

mation and public input gathered during this one-year study will ensure that we, the City, approach evacuation routing and signage as a holistic process to ensure consistency across Oahu. I especially want to acknowledge the support we have received from key community organizations in Ewa, Hau'ula, Kailua, Nanakuli and the North Shore who have come to the forefront as community disaster preparedness stakeholders."

Regional community outreach meetings are planned in identified high-risk coastal evacuation areas on Oahu. Specific dates and locations of these public meetings will be released as soon as site hosting agreements have been completed.

From:

<http://www1.honolulu.gov/csd/publiccom/honnews12/oahuemergencyevacuationplandec1212.htm>

Contact: John M. Cummings, III, Public Information Officer, Department of Emergency Management, 808-723-8960 (office).♦

Oregon Emergency Management receives the Citizen Corps Award for community preparedness

Oregon Emergency Management received the Citizen Corps Honorable Mention Award for Individual and Community Preparedness for a project that placed emergency backpacks in Oregon coastal counties. The backpacks contain emergency blankets, flashlights, and basic first aid supplies to be used in a disaster.

"I've worked on the Cascadia subduction zone catastrophic response plan and know that counties need assistance in caring for survivors in the event of a disaster," said Chuck Perino, Emergency Management Planner for Oregon Emergency Management. "It's great to be able to provide them something tangible to use."

Experts predict there is a 37% chance of a large Cascadia Zone earthquake in Oregon within the next 50 years. Oregon is located in the Cascadia subduction zone, a 600 mile long earthquake fault stretching from offshore northern California to southern British Columbia.

"We know Oregon is at risk for a major earthquake" said Martin Plotner, Director, Oregon Military Department's Office of Emergency Management. "This award brings attention to all of the hard work our staff at the Office of Emergency Management has done to make sure residents in Oregon are prepared," said Plotner. The State Citizen Corps Advisory council is made up of five citizen corps programs including Community Emergency Response Teams (CERT), fire corps, volunteers in police service, medical reserve corps and neighborhood watch. A total of 90 backpacks will be distributed to CERT and Fire Corps programs in the coastal counties.♦

**NATIONAL TSUNAMI AWARENESS WEEK:
MARCH 24-30, 2013**

VIDEO-CD-DVD RESERVATIONS

To reserve tsunami videos, CDs or DVDs, contact Lee Walkling, Division of Geology and Earth Resources Library, 1111 Washington St. SE, MS 47007, Olympia, WA 98504-7007; or e-mail lee.walkling@dnr.wa.gov.

These programs are available to all NTHMP participants, with a 3-week loan period.

Adventures of Disaster Dudes (14 min.). Preparedness for preteens. American Red Cross.

The Alaska Earthquake, 1964 (20 min.) Includes data on the tsunamis generated by that event.

Business Survival Kit for Earthquakes & Other Disasters; What every business should know before disaster strikes (27 min.). Global Net Productions for the Cascadia Regional Earthquake Workgroup, 2003. With CD disaster planning toolkit & other data.

Cannon Beach Fire District Community Warning System (COWS) (21 min.) Explains why Cannon Beach chose their particular warning system.

Cascadia: The Hidden Fire—An Earthquake Survival Guide (10 min.). Global Net Productions, 2001. A promo for a documentary about the Cascadia subduction zone and the preparedness its existence demands of Alaska, Oregon and Washington states. Includes mention of tsunamis.

Disasters are Preventable (22 min.) Ways to reduce losses from various kinds of disasters through preparedness and prevention.

Disaster Mitigation Campaign (15 min.). American Red Cross; 2000 TV spots. Hurricanes, high winds, floods, earthquakes.

Earthquake...Drop, Cover & Hold (5 min.). Washington Emergency Management Division. 1998.

Forum: Earthquakes & Tsunamis (2 hrs.). CVTV-23, Vancouver, WA (January 24, 2000). 2 lectures: Brian Atwater describes the detective work and sources of information about the Jan. 1700 Cascadia earthquake and tsunami; Walter C. Dudley talks about Hawaiian tsunamis and warning systems.

International Tsunami Information Centre, 2004, Tsunami warning evacuation news clips and video footage, UNESCO/IOC International Tsunami Information Centre, 1 DVD, 12 min.

Killer Wave: Power of the Tsunami (60 min.). National Geographic video.

Mitigation: Making Families and Communities Safer (13 min.) American Red Cross.

Not Business as Usual: Emergency Planning for Small Businesses, sponsored by CREW (Cascadia Regional Earthquake Workgroup) (10 min.), 2001. Discusses disaster preparedness and business continuity. Although it was made for Utah, the multi-hazard issues remain valid for everyone. Websites are included at the end of the video for further information and for the source of a manual for emergency preparedness for businesses.

Numerical Model Aonae Tsunami—7-12-93 (animation by Dr. Vasily Titov) and Tsunami Early Warning by Glenn Farley, KING 5 News (The Glenn Farley portion cannot be rebroadcast.)

Ocean Fury--Tsunamis in Alaska (25 min.) VHS and DVD. Produced by Moving Images for NOAA Sea Grant College Program, 2004.

The Prediction Problem (58 min.) Episode 3 of the PBS series "Fire on the Rim." Explores earthquakes and tsunamis around the Pacific Rim

Protecting Our Kids from Disasters (15 min.) Gives good instructions to help parents and volunteers make effective but low-cost, non-structural changes to child care facilities, in preparation for natural disasters. Accompanying booklet. Does NOT address problems specifically caused by tsunamis.

The Quake Hunters (45 min.) A good mystery story, explaining how a 300-year old Cascadia earthquake was finally dated by finding records in Japan about a rogue tsunami in January 1700

Raging Planet; Tidal Wave (50 min.) Produced for the Discovery Channel in 1997, this video shows a Japanese city that builds walls against tsunamis, talks with scientists about tsunami prediction, and has incredible survival stories.

Raging Sea: KGMB-TV Tsunami Special. (23.5 min.) Aired 4-17-99, tsunami preparedness in Hawaii.

The Restless Planet (60 min.) An episode of "Savage Earth" series. About earthquakes, with examples from Japan, Mexico, and the 1989 Loma Prieta earthquake.

Run to High Ground (14 min.). Produced by Global Net Productions for Washington Emergency Management Division and Provincial Emergency Program of British Columbia, 2004. Features storyteller Viola Riebe, Hoh Tribe. For K-6 grade levels. Have video and DVD versions.

Tsunami and Earthquake Video (60 min.). "Tsunami: How Occur, How Protect," "Learning from Earthquakes," "Computer modeling of alternative source scenarios."

Tsunami: Killer Wave, Born of Fire (10 min.). NOAA/PMEL. Features tsunami destruction and fires on Okushiri Island, Japan; good graphics, explanations, and safety information. Narrated by Dr. Eddie Bernard, (with Japanese subtitles).

Tsunami: Surviving the Killer Waves (13 min.). 2 versions, one with breaks inserted for discussion time.

Tsunami Chasers (52 min.). Costas Synolakis leads a research team to Papua New Guinea to study submarine landslide-induced tsunamis. Beyond Productions for the Discovery Channel.

Tsunami Evacuation PSA (30 sec.). DIS Interactive Technologies for WA Emergency Management Division. 2000.

TsunamiReady Education CD, 2005, American Geological Institute Earth Science Week kit.

Tsunamis: Know What to Do! (8 min. DVD)

Understanding Volcanic Hazards (25 min.). Includes information about volcano-induced tsunamis and landslides.

UNESCO/IOC International Tsunami Information Centre, 2005, U.S. National Tsunami Hazard Mitigation Program public information products—B-roll footage, tsunami science, warnings, and preparedness: UNESCO/IOC International Tsunami Information Centre, 1 DVD, 57 min.

The Wave: a Japanese Folktale (9 min.) Animated film to start discussions of tsunami preparedness for children.

Waves of Destruction (60 min.) An episode of the "Savage Earth" series. Tsunamis around the Pacific Rim.

Who Wants to be Disaster Smart? (9 min.). Washington Military Department/Emergency Management Division. 2000. A game show format, along the lines of *Who Wants to be a Millionaire?*, for teens. Questions cover a range of different hazards.

The Wild Sea: Enjoy It...Safely (7 min.) Produced by the Ocean Shores Wash. Interpretive Center, this video deals with beach safety, including tsunamis. ♦

